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State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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July 30, 1999

TO: Pam Grubaugh-Littig, Permit Supervisor

THRU: Daron Haddock, Permit Supervisor

FROM: Sharon Falvey, Senior Reclamation Hydrologist

RE: Phase II Bond Release, Received June 11, Western States Minerals, J.B. King Mine, ACT/015/002-99B, File #2, Emery County, Utah

SYNOPSIS

Western States Minerals submitted a request for Phase II and Phase III bond release. A memo from Pamela Grubaugh-Littig, dated July 6, 1999, indicates the Division will process the amendment for Phase II bond release. The submittal was determined to be incomplete with regard to Phase II bond release. Information should be submitted in a format where Phase II bond release is addressed separately from Phase III bond release.

ANALYSIS

Background

Prior to approval for Phase II bond release the following needs to be demonstrated:

- Show requirements for permanent impoundments are met and make provisions with the Division for sound future maintenance by the operator or the landowner (R645-301-880.320).
- Show suspended solids or runoff outside the permit area is not in excess of the requirements set by UCA 40-10-17(j) and by R645-301-700.
- Provide water quality data to show the quality of impounded water will be suitable on a permanent basis for its intended use and, after reclamation, will meet applicable Utah and federal water quality standards (R645-301-733.222.).

The following issues were recommended for inclusion in the bond release application during a site visit on August 28, 1998.

- Complete, summarize and finalize the on site erosion survey results.
- Compile information from the annual pond surveys to quantify the sediment deposited in the sedimentation pond over time.
- Provide a discussion on land form and potential long term erosive activity at the site as it relates to the land form, post-mining land use, and site specific characteristics.
- Provide a transfer for water rights at the well and sedimentation pond at the J.B. King site (Phase III). Provide water quality analyses to demonstrate the water quality meets the criteria for the proposed use and other applicable water quality standards for the state. (Note: a discussion to demonstrate the pond is adequate for the proposed use should include a discussion on water availability provided by the sedimentation pond).
- Complete a survey for the drainages to show that they meet the minimum design standards in the plan (Phase III).

In this submittal the on site erosion survey results survey for the drainages was not summarized or finalized. A survey showing the drainage meets minimum design standards was not provided. A discussion on land form and potential long term erosive activity at the site as it relates to the land form, post-mining land use, was not presented.

R645-301-880.320
Sedimentation Pond Retention

The following R645-301 regulations apply to permanent Sedimentation Ponds:

733.220. A permanent impoundment of water may be created, if authorized by the Division in the approved permit based upon the following demonstration:

733.221. The size and configuration of such impoundment will be adequate for its intended purposes;

733.222. The quality of impounded water will be suitable on a permanent basis for its intended use and, after reclamation, will meet applicable Utah and federal water quality standards, and discharges from the impoundment will meet applicable effluent limitations and will not degrade the quality of receiving water below applicable Utah and federal water quality standards;

733.223. The water level will be sufficiently stable and be capable of supporting the intended use; and,

880.320 The applicant needs to provide for sound future maintenance by the operator or the landowner with the Division.

Approval to retain the pond was previously granted. There were references to some of the regulatory requirements in the 1995 reclamation plan. For instance the text stated that State Lands would provide for future maintenance as land owner. However, no documentation specific to this requirement was found. **A specific document may exist but, it needs to be provided in the bond release application.** Water quality and water level information were not provided for sedimentation pond waters. Sediment pond water needs to meet the state water quality standard for the post mining land use of wildlife and grazing.

R634-301-742.313
Removal of all Temporary Sediment Control Measures and Diversions.

The north perimeter ditch routed to the sedimentation pond needs to be removed, regraded, roughened, and seeded before bond release can be granted.

UCA 40-10-17(j)

Lands to be released shall not contribute suspended solids or runoff outside the permit area in excess of the requirements set by UCA 40-10-17(j).

For which the applicable parts state:

> **(j) Minimize the disturbances to the prevailing hydrologic balance at the minesite and associated offsite areas and to the quality and quantity of water in surface and groundwater systems both during and after surface coal mining operations by:**
>
> **(I) Avoiding acid or toxic mine drainage.**
>
> **(ii)(A) Conducting surface coal mining operations so as to prevent to the extent possible using the best technology currently available, additional contributions of suspended solids to stream -flow or runoff outside the permit are, but in no event shall contributions be in excess of requirements set by applicable state or federal law:**

Acid and Toxic Drainage

The July 1995 permit amendment provides analyses of substitute topsoil materials at the site and suggests that after mixing through erosion processes the site will not produce acid and toxic forming material. The site does contain boron and selenium levels which are above the standards presented in the guidelines for Management of Topsoil and Overburden for Underground and Surface Coal Mining, State of Utah Department of Oil Gas and Mining, April

1988, by James Leatherwood and Dan Duce. The adjacent offsite area was stated to be generally similar to the onsite samples. This information, incorporated into the permit June 1995, was not reviewed at this time but addresses this requirement.

Additional Contributions of Suspended Solids

Reclamation at the J. B. King Mine was conducted in 1985-86 and is one of the first sites reclaimed in Utah under the SCMRA program. Regrading at the site was completed by placing the fill against the highwall with a convex land form. The deepest fill is located in areas where adjacent undisturbed lands with high runoff rates transport water through the site. Climatic changes impose periods of drought and high intensity short duration thunderstorms on this site. Unfortunately this results in land form and an environment predisposed to erosion, especially along the drainages.

The erosion is mostly retained on site. The sedimentation pond captures the sediment and is not known to have discharged over the reclamation period. Therefore the requirements to minimize additional contributions of suspended solids to stream-flow, or runoff, outside the permit area is met at this site. In addition, Rock mulch and biosolids were added to the refuse pile to decrease erosion in 1995. This activity has increased vegetation success and uses best technology currently available to reduce onsite erosion. Currently no refuse is exposed at the refuse pile.

The applicant submitted and compared annual sediment volumes deposited in the pond with the sheet and rill erosion rates estimated using RUSLE. The sediment deposition in the pond doubled beyond the average annual estimated sediment deposition for 1997 and 1998. The increased sediment volume was attributed to high intensity storms.

An Erosion Monitoring Program was set up for the reclaimed J.B. King Mine in 1995 to monitor erosion for Bond release purposes. Information was collected on-site and off-site along erosion monitoring transects and precipitation was recorded with an on-site recording rain gauge. The response to precipitation events and recovery from erosive events at the reclaimed site was proposed to be used to determine whether the erosive rate at the site is acceptable for the postmining land use.

A photographic record was also obtained on the site for each transect. Data was collected twice for the first two years after installation. The applicant installed a recording rain gauge and collected data for two years. The rain gauge was provided to determine the rill and gully erosion rate changes and influences from the intensity and duration of precipitation events. The applicant has not provided any information summarizing their data.

R645-301-880.210

The Division will not make a determination whether pollution of surface and subsurface water is occurring and determine the probability of future occurrence until all other requirements are met.

UCA 40-10-00(4)

No prime farmlands exist on site; therefore, UCA 40-10-00(4) does not apply.

FINDINGS

The application does not meet the minimum requirements in accordance with the R645 requirements for Phase II bond release; therefore the following needs to be provided in the bond release application:

R645-301-733. 1) Describe how the size and configuration of the impoundment is adequate for its intended purposes. 2) Demonstrate that the quality of impounded water will be suitable on a permanent basis for its intended use and, after reclamation, will meet applicable Utah and Federal water quality standards. 3) Demonstrate that the water level will be sufficiently stable and be capable of supporting the intended use.

R645-301-761. 1) The north perimeter ditch routed to the sedimentation pond needs to be removed, regraded, roughened, and seeded before bond release can be granted.

R645-301- 880.320. The applicant needs to provide for sound future maintenance by the operator or the landowner with the Division and include the documentation in the bond release permit application package.

Recommendations:

Should the applicant wish to submit Phase III bond release application with the response to address deficiencies in this review, it is recommended the applicant separate the elements applicable to Phase II and Phase III bond release.

Note: Phase III bond release will require the operator to :

- Provide a transfer for water rights at the well and sedimentation pond at the J.B. King site, or other documentation specific to this requirement in the bond release application.
- Continue to provide water quality analyses to demonstrate the water quality meets the criteria for the proposed use and other applicable water quality standards for the state.
- Show that all permanent structures meet design standards.

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